

How Do Socioeconomic Factors Affect the Development of Adolescent-Onset Drug Use Disorders?

Ziyue Wang¹ and Silvia Martins[#]

¹Stuyvesant High School, USA

[#]Advisor

ABSTRACT

Illicit drug use has been a significant issue among adolescents (aged 10 to 19 years). This review investigates the intricate relationship between socioeconomic factors and adolescent-onset illicit drug use in both the United States and Brazil. These socioeconomic factors were categorized into three primary domains: home life, community, and school. At the home level, households grappling with issues such as parental substance abuse, mental health challenges, or financial hardships are notably associated with adolescent drug use. Parental education levels emerge as a critical determinant, with lower education linked to an increased risk of drug use among adolescents. Furthermore, family dysfunction and exposure to adverse childhood experiences (ACEs), also escalate the likelihood of early drug experimentation. At the community level, poverty and neighborhood disorganization play a pivotal role in adolescent drug use. Adolescents residing in economically disadvantaged communities face heightened vulnerability due to elevated stress and crime, often resorting to illicit drugs as a coping mechanism. The school environment also plays a crucial role in shaping drug use through peer influence. In dysfunctional homes, adolescents seek support outside the family, forming vulnerable connections with peers engaged in substance use. Understanding the intricate association of these socioeconomic factors is imperative for policymakers, healthcare professionals, and educators. Targeted interventions should be developed to curtail the prevalence of adolescent substance use and foster the overall well-being of young individuals in society.

Introduction

The World Health Organization (WHO) defines adolescents as individuals aged from 10 years to 19 years. Adolescence is a crucial developmental stage where significant physical, emotional, and psychological changes occur. These changes can affect an individual's decision-making skills and their interactions with their environment. [1]

During this stage, socioeconomic status (SES) is very important in shaping an individual's habits, education, and overall well-being. Unfortunately, there are many instances where adolescents live in an impoverished socioeconomic situation—riddled with multiple stressors such as crime, family dysfunction, poor education, etc. [2] Often, these stressors can disrupt healthy development and cause many adolescents to initiate drug use too, such as alcohol, cocaine, and primarily cannabis. [3,4] Many studies have found that racial and ethnic minorities who have lower SES are more likely to use marijuana throughout their lifetime. [5] However, the connection between SES and adolescent drug use is indeed very complex.

The use of substances, including opioids, among teenagers has increased significantly in the US in the past decade. According to the 2021 National Survey of Drug Use and Health, the use of illicit drugs among adolescents aged 12 to 17-year-olds in the US is 21.3%. [6] Studies have shown that 12.4% of adolescents have used opioids for non-medical purposes, such as getting high. [7] It has been shown that many risk factors

associated with the use of non-medical substance use are related to a teen's socioeconomic status. [8] Teens with friends who use drugs and have uninvolved parents are more likely to participate in illicit drug use. Additionally, teens who have low academic achievements and have more frequent arguments with their parents are more commonly associated with opioid use. [9]

Brazil also faces a similar problem. In a middle-income country like Brazil, youth substance use is prevalent, with almost 32% of teens having binge drinking episodes in a year. [10] A household survey addressing the lifetime use of illicit drugs by Brazilian adolescents found that 22.8% of the population has used some drugs and that marijuana is the most reported drug among all adolescents. [11] Brazil is known for its economic diversity and inequality. A significant portion of Brazilians live in poverty or even extreme poverty. Many low-SES communities border high-SES communities, as seen in favelas—"slums" – like the ones found in Rio de Janeiro. [12]

This review aims to discuss various socioeconomic factors that influence the development of adolescent-onset drug use disorder. Specifically, I focused on research conducted in the United States and Brazil.

Home Life

An unhealthy home environment may be characterized by parents or caregivers who are grappling with their own issues, such as substance abuse, mental health problems, or financial hardships. [13] Economic issues in the family can lead to a deterioration in marital relationships, which in turn can affect the mental health of the adolescents in the family. [14] Consequently, parental supervision and emotional support may be lacking, leaving the adolescent feeling emotionally neglected. The home should be a safe haven for adolescents, but in dysfunctional households, it becomes a source of stress and instability.

Parental Education

Parental education plays a big role in determining the magnitude of how likely an adolescent will engage in illicit drug use. In low SES families, the risk of drug use is heightened by home instability, financial strain, and other factors influenced by a lesser parental education. High levels of family conflict, marital discord, or general dysfunction in the household can cause emotional instability and stress for the adolescent. [15] Growing up in such an environment can lead to maladaptive coping strategies, including substance use, as a way to escape or self-medicate emotional pain. Studies have shown that American adolescents whose parents have lower levels of education are more likely to use illicit drugs. From ages 12 to 15, American adolescents with perceived below-average financial status are more likely to use illicit drugs compared to American adolescents with perceived average to well above-average financial status. However, from ages 16 to 19, the rate of drug use among American adolescents with perceived average to well above average economic status significantly increased, exceeding that of American adolescents with perceived below average financial status. [16] Furthermore, American adolescents are more likely to use opioids for non-medical purposes if both of their parents haven't completed high school compared to adolescents of the same race. White males and females, 3.6% and 3.2%, respectively, with no parent with college completed, have the highest rate of opioid use. Additionally, African-American adolescents are more likely to use opioids if their parents have had a lesser education, and Hispanic males are more likely to use opioids in general. [17]

Research has shown that there is a significant relationship between maternal education and adolescent drug use. Generally, there is a negative correlation between higher levels of maternal education and adolescent drug use. Adolescents whose mothers have higher levels of education are less likely to initiate or engage in drug use compared to those whose mothers have lower levels of education [18, 19] The most common drugs that an adolescent, whose mother only had a high school education, used were inhalants (Relative Risk, RR: 2.5), crack/cocaine (RR: 2.8), psychedelics/hallucinogens (RR: 1.8), club/designer drugs (RR: 1.8), and a mixture of

them (RR: 1.7). [19] As a mother's education increased, the probability of adolescent cocaine use decreased. In the US, data from the 1980s and 1990s revealed that marijuana and cocaine use among adolescents was initially more common in higher SES families in the 1980s but shifted by 1998, with cocaine prevalence increasing significantly among adolescents with low SES families and marijuana having no connection with SES. [18]

Brazil faces a similar problem. Like the US, studies in Brazil have also shown that a lack of parental education has negative effects on an adolescent's involvement in drug use. Among substance misuse adolescents, the father's education level was lower than that of the mothers. Therefore, the study suggests that drug intervention programs for adolescents need to include the education of parents and future parents and the treatment of adults. [20]

Family Dysfunction and Adverse Childhood Experiences (ACE)

Exposure to ACE (such as parental substance use, incarceration, and domestic violence) can lead to many negative side effects, including early exposure to illicit drug use. According to the National Institutes of Health (NIH), 61% of individuals have at least one ACE in their lifetime, and almost 25% have three or more ACEs. Most of these experiences happen in an individual's childhood, with more than 66% of children experiencing an ACE before the age of 16. Additionally, due to the COVID-19 pandemic, many children were stuck in homes that were unsafe and violent, with domestic abuse being up by 30% in 2020. [21] According to a study, compared with people who did not experience ACEs, people who were exposed to ACE with greater than four episodes were 7 to 10 times more likely to have illicit drug problems. [22] Youth with ACEs may be more vulnerable to certain peer influences, such as drug use because they live with parents who use drugs or drink alcohol and may also inherit a genetic predisposition toward substance use. [23]

In a New Jersey study focused on predominantly white adolescents, researchers found that parental alcoholism had a significant impact on a child's alcohol consumption. Additionally, despite having weak illicit drug usage relations with family relations, drug use was more prominent in parental relationships that were hostile, especially if the father was involved. Researchers also found that there is an inverse correlation between sibling relationships and drug use, meaning that many drug users have normal relationships with their siblings. [24]

The association between illicit drug use and family dysfunction and ACE is also observed in Brazil. Street-involved youth in Brazil are more likely to have physical and mental difficulties due to high levels of physical and sexual violence, poverty, and neglect, which may lead to illicit drug use in the future. [25] According to a study published by Hannah Carliner and colleagues, adolescents with violent parents were more likely to abuse illicit drugs. Furthermore, the parents of adolescents who use illegal drugs were about four times more likely to have alcohol and drug addiction. [26] This intergenerational pattern of substance abuse can be attributed to both genetic factors and the influence of a family environment where substance abuse is normalized. [20]. According to a cross-sectional study involving adolescents aged 15 to 19 years in the city of Belo Horizonte, those who had more ACEs had a higher prevalence of alcohol, tobacco, and illicit drug use, and a higher risk for illegal drug experimentation. [11]

Community

Humans are social creatures. The community that we are a part of during our adolescence affects how susceptible we are to drug use. At the community level, community norms, poverty level, and safety can have significant impacts on adolescents' substance use.

Community Poverty

Lower community median income and poverty are connected to adolescent drug use. Adolescents in communities with low median incomes, highest poverty, and highest unemployment are more likely to use inhalants (RR: 1.5). Additionally, adolescents are more likely to use psychedelics/hallucinogens (RR: 1.6) and Ritalin (RR: 1.6) without a prescription in communities with high poverty and are more likely to use cocaine (RR: 1.5) in communities with high unemployment rates. [15] Neighborhoods with high poverty and unemployment rates are usually accompanied by chaos and crime, which is detrimental to an adolescent's mental health. Adolescents who live in a disorganized community often suffer from feelings of threat and danger, which leads them to use drugs, such as marijuana, to cope. [19]. According to the 2022 NSDUH survey, among adolescents (aged 12 to 17) who use illicit drugs (3662 individuals), approximately 59% live in a neighborhood with a poverty level of 200% or more (2142 individuals). [6]

Recently, there have been many studies on neighborhoods with predominately African-American residents. [27-29] This is because Black youth disproportionately live in neighborhoods with high levels of violence and chaos and are much more likely to use illicit drugs, marijuana in particular. [27] Despite being legal in almost half of the states in the US, Marijuana use can lead to an increase in motor vehicle crashes, risky sexual behavior, poor school performance, unemployment, arrest, lower lifetime achievement and satisfaction, and attention and memory deficits. Additionally, adolescents are more likely to develop a lifetime cannabis use disorder (16.7%). [28] Studies have found that youth living in neighborhoods that were deteriorating were 30% more likely to use marijuana after high school than adolescents living in neighborhoods that have been steady. However, there was no connection between living in affluent neighborhoods and less marijuana use. [29] Additionally, studies showed that marijuana offers that lead to use and problems were found to be associated with drug activity, disadvantage, and neighborhood disorder. Furthermore, neighborhood disorder, drug activity, and violent crime quickly transitioned adolescents from no involvement to uses and problems. [27]

Studies in Brazil have also found similar results. A study found that premature access to drugs is a risk to adolescents from poor neighborhoods. The average age for drug use initiation found in this study was between 12 and 13; some kids even started as early as seven years old. It was very common for children to be hired as drug dealers in many poor neighborhoods in Brazil. [30] In a study focused on adolescents from low-income neighborhoods, researchers found that 71% of these adolescents experimented with wine or beer. Additionally, researchers have found a positive correlation between the use of marijuana, cocaine, and crack and a history of drug trafficking and crime. [30] Another study targeting adolescents aged between 13 and 19 from low-income neighborhoods found that there is a strong connection between binge drinking and illicit drug use. In these low-income neighborhoods, the prevalence of illicit drug use was 15.8%, which was much higher than that found in many other studies. There was a higher prevalence of illicit drug use among males (18.4%) compared to females (13.1%). The use of illicit drugs was four times more prevalent among students who already had pre-existing problems with drinking. [32]. In a 2012 study done in Brazil comprising 761 adolescents aged 14 to 19 years old, researchers found that 50% of the study's participants had consumed alcohol in the past year, and 60% of adolescents living in urban areas had consumed alcohol in the past year. The average age at which an adolescent would start drinking was 15.8 years old, while the average age of the participants was 16.5 years. [33]

School

Peer Influence

In dysfunctional homes, adolescents may seek support and belonging outside the family, potentially forming connections with peers who engage in substance use. Youth who have more ACEs tend to seek out friends with similar characteristics and experiences and may bond with friends who also use substances. They may also spend more unstructured time with their friends, which is associated with more frequent substance use. [23] Peer pressure and the desire to fit in can drive adolescents to experiment with illicit drugs, especially if they perceive it as a way to enhance their social standing or cope with stress. [33] Without strong family support, the influence of peers becomes more pronounced, increasing the risk of substance misuse.

In Brazil, studies have found that having groups of friends linked to sports and cultural activities seems to be a protective factor against lifetime illicit drug use among Brazilian adolescents. Participation in sports positively affects health, mood, functional capacity, and general well-being. Additionally, these researchers found that gender heterogeneity was a significant risk factor for drug use. Opposite-gender friends were stronger than same-gender friends with regard to drug use. This is likely due to sexuality, as illicit drug use favors friendships between genders. [11]

Conclusions

Many studies have shown that one's socioeconomic status plays a big role in the development of adolescent-onset drug use disorder. The three main socioeconomic factors explored in this paper are home, community, and school.

Studies have found that an adolescent's home life in both the US and Brazil has the most impact on their onset of illicit drug use. In dysfunctional families, studies have found a much higher prevalence of adolescent drug use. Adverse Childhood Experiences (ACEs) are also a trigger in adolescent drug use. Additionally, we have found that parental education, especially maternal, is extremely important in this development.

Community-level factors, such as poverty and neighborhood disorganization, have also been found to contribute significantly to adolescent drug use. Adolescents living in economically disadvantaged communities are more vulnerable to drug use due to the high level of stress, crime, and peer influence.

Adolescents spend most of their time at school. The people you grow up with and hang around are often the people who affect you the most. Being around peers who are involved in illicit drug use increases the likelihood of the adolescent getting involved as well. This emphasized the need for interventions that promote positive peer relationships and discourage substance use.

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References

1. Singh, J. A., Siddiqi, M., Parameshwar, P., & Chandra-Mouli, V. (2019). World Health Organization Guidance on Ethical Considerations in Planning and Reviewing Research Studies on Sexual and

- Reproductive Health in Adolescents. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*, 64(4), 427–429. <https://doi.org/10.1016/j.jadohealth.2019.01.008>
2. Gerra, G., Benedetti, E., Resce, G., Potente, R., Cutilli, A., & Molinaro, S. (2020). Socioeconomic Status, Parental Education, School Connectedness and Individual Socio-Cultural Resources in Vulnerability for Drug Use among Students. *International journal of environmental research and public health*, 17(4), 1306. <https://doi.org/10.3390/ijerph17041306>
 3. Daniel, J. Z., Hickman, M., Macleod, J., Wiles, N., Lingford-Hughes, A., Farrell, M., Araya, R., Skapinakis, P., Haynes, J., & Lewis, G. (2009). Is socioeconomic status in early life associated with drug use? A systematic review of the evidence. *Drug and alcohol review*, 28(2), 142–153. <https://doi.org/10.1111/j.1465-3362.2008.00042.x>
 4. de Looze, M., Janssen, I., Elgar, F. J., Craig, W., & Pickett, W. (2015). Neighbourhood crime and adolescent cannabis use in Canadian adolescents. *Drug and alcohol dependence*, 146, 68–74. <https://doi.org/10.1016/j.drugalcdep.2014.11.005>
 5. Hoffman, V. L., Glasheen, C., & Batts, K. R. (2017). Marijuana Use, Recent Marijuana Initiation, and Progression to Marijuana Use Disorder Among Young Male and Female Adolescents Aged 12-14 Living in US Households. *Substance abuse: research and treatment*, 11, 1178221817711159. <https://doi.org/10.1177/1178221817711159>
 6. 2021 NSDUH Detailed Tables. National Survey on Drug Use and Health. Available at: <https://www.samhsa.gov/data/report/2021-nsduh-detailed-tables>. Accessed on Nov 27, 2023
 7. Palamar, J. J., Shearston, J. A., Dawson, E. W., Mateu-Gelabert, P., & Ompad, D. C. (2016). Nonmedical opioid use and heroin use in a nationally representative sample of us high school seniors. *Drug and Alcohol Dependence*, 158, 132–138. <https://doi.org/10.1016/j.drugalcdep.2015.11.005>
 8. Legleye, S., Beck, F., Khlat, M., Peretti-Watel, P., & Chau, N. (2012). The influence of socioeconomic status on cannabis use among French adolescents. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*, 50(4), 395–402. <https://doi.org/10.1016/j.jadohealth.2011.08.004>
 9. Lipari, R. N., & Van Horn, S. L. (2017). Children Living with Parents Who Have a Substance Use Disorder. In *The CBHSQ Report*. (pp. 1–7). Substance Abuse and Mental Health Services Administration (US).
 10. Healy, S., Martins, S. S., Fidalgo, T. M., & Sanchez, Z. M. (2020). Belief patterns and drug use in a sample of Brazilian youth: an exploratory latent class analysis. *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, 42(3), 278–285. <https://doi.org/10.1590/1516-4446-2019-0706>
 11. Jorge, K. O., Ferreira, R. C., Ferreira, E. F. E., Kawachi, I., Zarzar, P. M., & Pordeus, I. A. (2018). Influência do grupo de pares e uso de drogas ilícitas entre adolescentes brasileiros: um estudo transversal [Peer group influence and illicit drug use among adolescent students in Brazil: a cross-sectional study]. *Cadernos de saude publica*, 34(3), e00144316. <https://doi.org/10.1590/0102-311X00144316>
 12. Jonathan D. Prince jprin@hunter.cuny.edu (2015) Opioid Analgesic Use Disorders Among Adolescents in the United States, *Journal of Child & Adolescent Substance Abuse*, 24:1, 28-36, <https://doi.org/10.1080/1067828X.2012.754391>
 13. Lander, L., Howsare, J., & Byrne, M. (2013). The impact of substance use disorders on families and children: from theory to practice. *Social work in public health*, 28(3-4), 194–205. <https://doi.org/10.1080/19371918.2013.759005>
 14. Behere, A. P., Basnet, P., & Campbell, P. (2017). Effects of Family Structure on Mental Health of Children: A Preliminary Study. *Indian journal of psychological medicine*, 39(4), 457–463. <https://doi.org/10.4103/0253-7176.211767>

15. Aschengrau, A., Grippo, A., & Winter, M. R. (2021). Influence of Family and Community Socioeconomic Status on the Risk of Adolescent Drug Use. *Substance use & misuse*, 56(5), 577–587. <https://doi.org/10.1080/10826084.2021.1883660>
16. Hamilton, H. A., Noh, S., & Adlaf, E. M. (2009). Perceived financial status, health, and maladjustment in adolescence. *Social science & medicine (1982)*, 68(8), 1527–1534. <https://doi.org/10.1016/j.socscimed.2009.01.037>
17. Cristina B. Bares, Addie Weaver & Mary F. Kelso (2019) Adolescent opioid use: Examining the intersection of multiple inequalities, *Journal of Prevention & Intervention in the Community*, 47:4, 295-309, <https://doi.org/10.1080/10852352.2019.1617382>
18. Miech, R., & Chilcoat, H. (2005). Maternal education and adolescent drug use: a longitudinal analysis of causation and selection over a generation. *Social science & medicine (1982)*, 60(4), 725–735. <https://doi.org/10.1016/j.socscimed.2004.06.025>
19. Reboussin, B. A., Green, K. M., Milam, A. J., Furr-Holden, D. M., Johnson, R. M., & Ialongo, N. S. (2015). The role of neighborhood in urban black adolescent marijuana use. *Drug and alcohol dependence*, 154, 69–75. <https://doi.org/10.1016/j.drugalcdep.2015.06.029>
20. da Silva, V. A., de Aguiar, A. S., Felix, F., Rebello, G. P., Andrade, R. C., & Mattos, H. F. (2003). Brazilian study on substance misuse in adolescents: associated factors and adherence to treatment. *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, 25(3), 133–138. <https://doi.org/10.1590/s1516-44462003000300004>
21. Shannon Karl (2021). The intersection of childhood trauma and addiction. *Counseling Today*. Available at: <https://ct.counseling.org/2021/04/the-intersection-of-childhood-trauma-and-addiction/>. Accessed on Nov 27, 2023
22. Janet Gross & Mary E. McCaul (1990) A Comparison of Drug Use and Adjustment in Urban Adolescent Children of Substance Abusers, *International Journal of the Addictions*, 25:sup4, 495-511, <https://doi.org/10.3109/10826089009105127>
23. Stritzel H. (2022). Peer and Community Influences on Adolescent Substance Use in the Context of Adverse Childhood Experiences. *Sociological perspectives : SP : official publication of the Pacific Sociological Association*, 65(2), 413–432. <https://doi.org/10.1177/07311214211018718>
24. Johnson, V., & Pandina, R. J. (1991). Effects of the family environment on adolescent substance use, delinquency, and coping styles. *The American journal of drug and alcohol abuse*, 17(1), 71–88. <https://doi.org/10.3109/00952999108992811>
25. Raffaelli, M., Santana, J. P., de Morais, N. A., Nieto, C. J., & Koller, S. H. (2018). Adverse childhood experiences and adjustment: A longitudinal study of street-involved youth in Brazil. *Child abuse & neglect*, 85, 91–100. <https://doi.org/10.1016/j.chiabu.2018.07.032>
26. Carliner, H., Keyes, K. M., McLaughlin, K. A., Meyers, J. L., Dunn, E. C., & Martins, S. S. (2016). Childhood Trauma and Illicit Drug Use in Adolescence: A Population-Based National Comorbidity Survey Replication-Adolescent Supplement Study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 55(8), 701–708. <https://doi.org/10.1016/j.jaac.2016.05.010>
27. LaVeist, T. A., & Wallace, J. M., Jr (2000). Health risk and inequitable distribution of liquor stores in African American neighborhood. *Social science & medicine (1982)*, 51(4), 613–617. [https://doi.org/10.1016/s0277-9536\(00\)00004-6](https://doi.org/10.1016/s0277-9536(00)00004-6)
28. Reboussin, B. A., Green, K. M., Milam, A. J., Furr-Holden, D. M., Johnson, R. M., & Ialongo, N. S. (2015). The role of neighborhood in urban black adolescent marijuana use. *Drug and alcohol dependence*, 154, 69–75. <https://doi.org/10.1016/j.drugalcdep.2015.06.029>
29. Furr-Holden, C. D., Lee, M. H., Milam, A. J., Johnson, R. M., Lee, K. S., & Ialongo, N. S. (2011). The growth of neighborhood disorder and marijuana use among urban adolescents: a case for policy and

- environmental interventions. *Journal of studies on alcohol and drugs*, 72(3), 371–379.
<https://doi.org/10.15288/jsad.2011.72.371>
30. Nardi, F. L., Cunha, S. M., Bizarro, L., & Dell'Aglio, D. D. (2012). Drug use and antisocial behavior among adolescents attending public schools in Brazil. *Trends in psychiatry and psychotherapy*, 34(2), 80–86. <https://doi.org/10.1590/s2237-60892012000200006>
31. Furr-Holden, C. D., Lee, M. H., Milam, A. J., Johnson, R. M., Lee, K. S., & Ialongo, N. S. (2011). The growth of neighborhood disorder and marijuana use among urban adolescents: a case for policy and environmental interventions. *Journal of studies on alcohol and drugs*, 72(3), 371–379.
<https://doi.org/10.15288/jsad.2011.72.371>
32. Madruga, C. S., Laranjeira, R., Caetano, R., Pinsky, I., Zaleski, M., & Ferri, C. P. (2012). Use of licit and illicit substances among adolescents in Brazil--a national survey. *Addictive behaviors*, 37(10), 1171–1175. <https://doi.org/10.1016/j.addbeh.2012.05.008>
33. Otero López, J. M., Mirón Redondo, L., & Luengo Martín, A. (1989). Influence of family and peer group on the use of drugs by adolescents. *The International journal of the addictions*, 24(11), 1065–1082. <https://doi.org/10.3109/10826088909047329>